

ABSTRACT OF THE DISCLOSURE

A staged method of forming vinyl (e.g. acrylate) copolymer by solution polymerization which involves a) charging up to 90% of at least two vinyl monomers of the vinyl copolymer to a first stage reaction zone, b) polymerizing the at least two vinyl monomers to about 10 to 90% conversion in the presence of an initiator at an initiator to monomers mole ratio within a specified range, the monomer content of one of the at least two vinyl monomers of the copolymer formed in the first stage being higher than the content of another of the at least two vinyl monomers in the first stage polymer, the weight average molecular weight of the first stage copolymer being about 2000 to 500,000 Daltons; and c) continuing polymerization in the presence of an initiator in a second stage while continuously adding the balance of the monomers of said vinyl copolymer to the polymerization reaction mixture of the first stage at a monomers ratio lower in the one monomer than in the first stage monomers ratio, the initiator to monomers mole ratio in the second stage being different than in the first stage; the vinyl copolymer formed gradually continuously changing in molecular weight from the first stage and increasing in concentration of the one monomer during the second stage, the weight average molecular weight of the total copolymer of both stages being about 2,000 to 250,000 Daltons.